Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-11 and 15-18 are pending in the application. Withdrawn claims 12-14 have been canceled without prejudice or disclaimer. None of the amendments introduce new matter. Entry of the amendments is respectfully requested.

Support for the amendment to claim 1 is found, *inter alia*, at paragraphs [0062] and [0111], and in the header to paragraph [0111], in the specification as filed.

Support for new paragraph [0036a] is found, *inter alia*, in claim 15 as originally filed.

Support for the amendment to claim 15 is found, *inter alia*, at paragraphs [0035]-[0037], [0090] and [0095].

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that the objections and rejections be withdrawn.

Miscellaneous - Applicants' Information Disclosure Statements

Applicants filed an Information Disclosure Statement (IDS) on May 31, 2002, a First Supplemental IDS on August 19, 2002, and, a Second Supplemental IDS on March 28, 2003. However, none of the 1449 forms, with the art initialed as having been considered by the Examiner, were returned with the first office action on the merits. Consideration of the IDS' and the art cited therein, and return of a copy of the 1449

forms, with the art initialed as having been considered by the Examiner, is respectfully requested.

Objection to the Specification

A) The examiner objected to the disclosure stating that the SEQ ID Number must be added to the claims. Applicants have added the SEQ ID Number to the claims.

B) The examiner objected to the disclosure stating additional sequences must be added to the CRF disclosure. Submitted herewith is a substitute Sequence Listing and Disk which adds additional sequences. The substitute sequence listing and disk are the same and contain no new matter.

Objection to the Figures

A) The examiner objected to Figure 1 stating he cannot tell the bold from the non-bold text in Figure 1. Applicants have amended the legend to Figure 1 to recite the location of the bold and the non-bold text in this figure. In addition, Applicants have provided a replacement sheet copy of Figure 1.

B) The examiner objected to Figure 4 as being too dim, and stated that it is not known what is meant by the recitation that the "scores are shown on the top line and are listed in the column after the source of the sequence." The examiner states that the meaning of the bar graph on the top line is not known and that there does not appear to be anything listed in the column after the source of the sequence.

A substitute Figure 4 is submitted herewith. Figure 4 has been enlarged and split onto three sheets. Also, the shading has been removed so as to increase the clarity of the sequences. The degree of shading corresponded to the height of the score bars; therefore, all the information that was present on the figure as originally filed is still there. Rremoving the shading does not remove any information or result in new matter.

The graph is simply a visual representation of the degree of homology among the listed sequences. The higher the graph, the higher the homology at that site.

Support for the alignment analysis in Figure 4 is found in paragraphs [0066-, [0137] and [0195]. The alignment "scores" are shown on the top line of every section but the first section. The higher the score, the better the alignment.

The numbers listed in the first column after the source of the sequence indicate the amino acid number for that particular sequence at the start of each line.

C) The examiner objected to Figure 5 stating that the solid and hatched boxes cannot be distinguished.

A substitute Figure 5 is submitted herewith in which the solid and hatched boxes are more clearly distinguished.

D) A) The examiner objected to Figure 9 stating that what is in the lanes of Figure 9 is not readily discernible.

A substitute Figure 9 is submitted herewith in which the visualization of the lanes is readily discernible.

Rejection under 35 U.S.C. § 112, Second Paragraph

Claim 1 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner states that claim 1 is confusing because it contains portions that were not elected for prosecution. Applicants respectfully traverse this rejection.

The recitation of non-elected subject matter does not render a claim *prima facie* indefinite. The Examiner has cited no case law or Board decision in support of the same. Accordingly, *prima facie* indefiniteness is not established. However, in the interests of advancing prosecution, Applicants have canceled the non-elected subject matter from claim 1. Accordingly this rejection can be withdrawn.

Rejection of Claims 1-11 under 35 U.S.C. § 112, First Paragraph

Claims 1-11 are rejected under 35 U.S.C. §112, first paragraph. The Examiner states that the specification is enabled for a polynucleotide encoding an amino acid sequence that is 100 % identical with residues 1-618 of SEQ ID No:2 does not reasonably provide enablement for a polynucleotide encoding an amino acid sequence that is 95% identical. Applicants respectfully traverse this rejection.

Claims 1 and 12 have been amended to recite that the claimed polypeptide that is 95% identical to that of SEQ ID No. 2 also has C5-epimerase enzyme activity. It is known how to assay for C5-epimerase enzymatic activity and the specification also teaches the same. Applicants respectfully submit that it would not require undue experimentation to make and use the claimed invention.

Rejection of Claims 15-18 under 35 U.S.C. § 112, First Paragraph

Claims 15-18 are rejected under 35 U.S.C. §112, first paragraph. The Examiner states that the claims should be limited to the embodiment that was shown to increase activity. Applicants respectfully traverse this rejection.

The claims have been amended to recite that the polypeptide has an increased enzyme activity as compared to its activity prior to attaching the second sequence. Accordingly, this rejection can be withdrawn.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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Amendments to the Drawings

Please cancel originally filed Figure 1 (two sheets) and replace therewith Replacement Sheet Figure 1 (two sheet), as attached to this pleading.

Please cancel originally filed Figure 4 (one sheet) and replace therewith Replacement Sheets Figure 4A, 4B and 4C (three sheets), as attached to this pleading.

Please cancel originally filed Figure 5 (one sheet) and replace therewith Replacement Sheet Figures 5 (one sheet), as attached to this pleading.

Please cancel originally filed Figure 9 (one sheet) and replace therewith Replacement Sheet Figure 9 (one sheet), as attached to this pleading.

Attachment: Replacement Sheets for Figure 1 (two sheets), Figure 4 (three sheets), Figure 5 (one sheet) and Figure 9 (one sheet).

Amendments to the Sequence Listing

Please cancel the sequence listing filed December 7, 2001, and replace therein at

the end of the application, the substitute sequence listing, attached herewith.

Attachment: Sequence listing and disk